

REMARKS

Reconsideration of this application is respectfully requested.

Claims 26-27, 30-32, 36, 39, 41-42, and 54-55 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,198,718 (Davis). Claims 28, 37-38, and 43 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over Davis in view of U.S. Patent No. 5,656,141 (Betz). Claims 33-35 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over Davis in view of U.S. Patent No. 5,156,703 (Oechsner). Claim 40 is rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over Davis in view of U.S. 4,857,430 (Adler).

Applicants traverse each of these rejections.

Davis, the primary reference cited by the Examiner, discloses an apparatus which is structurally and functionally different from the presently claimed invention.

The presently claimed invention relates to plasma beam source for producing a divergent neutral plasma beam.

In contrast, Davis discloses an ion gun 3 for producing a collimated beam 8. More specifically, the ion gun 3 comprises a grid structure 6 which comprises two grids 29, 30 to set up an accelerating field for ions (cf. col. 9, lines 60 to 65). Davis also discloses an ion beam neutralizer 7 (cf. 10, lines 5 ff and figure 1). Thus, the grid 30 is not a mask, as the Examiner contends, but is an integral part of the grid structure 6. Therefore, grid structure 6 in Davis was not used or intended to be used for the acceleration of neutral plasma particles, but can only be used for acceleration of charged particles.

In addition, Davis explicitly states that the ion gun 3 produces a collimated ion beam (cf. col. 10, line 53 ff.). Collimated means "parallel oriented" and is not "divergent" as claimed in the present application.

Furthermore, Figure 1 of Davis clearly shows that the ion beam in Davis is not going to fan out in the distance, in contrast to the plasma beam according to the presently claimed invention.

To sustain an anticipation rejection, the cited reference must encompass every limitation set forth in a claim.

As discussed above, the invention of Davis can only be used for acceleration of charged particles and produce a collimated, i.e., parallel oriented ion beam. Davis fails to teach the features of "extracting a neutral plasma beam" and "attain a divergently formed plasma beam" as set forth in independent claim 26.

Therefore, Davis does not anticipate claim 26 and the §102(b) rejection of claim 26 should be withdrawn. Since claims 27, 30-32, 36, 39, 41-42, and 54-55 all ultimately depend from claim 26, the anticipation rejections of these dependent claims should be withdrawn as well.

Since none of the cited secondary references overcome the deficiencies of Davis, all the obviousness rejections should be withdrawn.

In view of the foregoing, allowance is believed proper.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-0624, under Order No. NY-RPP-202-US (10510421).

Dated: August 18, 2011

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